WHAT IS CLAIMED IS:

1. A method of measuring a clearance distance between a first member and a stationary member, said method comprising:

measuring the clearance distance using a first probe that is removably coupled at least partially within a mounting adapter;

determining a first probe calibration based on the measured clearance distance;

measuring a gauge clearance distance using a second probe; and

modifying the first probe calibration based on the gauge clearance distance.

2. A method in accordance with Claim 1 wherein measuring a gauge clearance distance using a second probe comprises measuring a gauge clearance distance using a second probe that is removably coupled at least partially within the mounting adapter.

3. A method in accordance with Claim 1 wherein measuring the clearance distance comprises measuring the clearance distance using an electrically-excited probe.

4. A method in accordance with Claim 3 wherein measuring the clearance distance using an electrically-excited probe comprises measuring the clearance distance using a capacitance probe.

5. A method in accordance with Claim 4 wherein measuring the clearance distance using a capacitance probe comprises measuring the clearance distance using an amplitude modulation excited capacitance probe.

6. A method in accordance with Claim 1 wherein measuring a gauge clearance distance using a second probe comprises measuring the gauge clearance distance using a mechanical probe.

7. A method in accordance with Claim 6 wherein measuring the gauge clearance distance using a mechanical probe comprises measuring the gauge clearance distance using a depth micrometer gauge.

8. A method in accordance with Claim 7 wherein the gauge includes a gauge body and a gauge rod that is extendable from the gauge body, wherein measuring the gauge clearance distance using a depth micrometer gauge comprises extending the gauge rod to contact the rotatable member.

9. A method in accordance with Claim 8 wherein extending the gauge rod to contact the rotatable member comprises extending the gauge rod through a removable guide sleeve.

10. A method in accordance with Claim 9 wherein extending the gauge rod through a removable guide sleeve comprises extending the gauge rod through a removable guide sleeve such that a gauge rod movement in a direction that is perpendicular to a gauge rod longitudinal axis is substantially prevented.

11. A method in accordance with Claim 1 further comprising:

removing the first probe from the mounting adapter;

zeroing a position of the second probe with respect to a measurement scale; and

inserting the second probe into the mounting adapter such that at least a portion of the second probe passes through a guide sleeve wherein the guide sleeve is substantially axially co-aligned with respect to the mounting adapter.

12. A method in accordance with Claim 11 wherein the second probe is a depth gauge, the depth gauge includes a gauge body and a gauge rod that is extendable from the gauge body, the method further comprising lockably coupling the second probe into the mounting adapter such that a gauge body movement in a direction that is parallel to a gauge rod longitudinal axis is substantially prevented.

13. A method in accordance with Claim 1 wherein the second probe includes a gauge body and a gauge rod that is extendable from the gauge body, wherein measuring a gauge clearance distance using a second probe comprises measuring a gauge clearance distance such that the gauge rod extends through an aperture of the mounting adapter, the aperture including a rod guide surface.

14. A method in accordance with Claim 13 wherein measuring a gauge clearance distance comprises extending the gauge rod through an aperture of the mounting adapter such that a gauge rod movement in a direction that is perpendicular to a gauge rod longitudinal axis is substantially prevented.

15. A method in accordance with Claim 13 wherein measuring a gauge clearance distance comprises extending the gauge rod through a mounting adapter aperture that is substantially axially co-aligned with respect to the mounting adapter.

16. A method in accordance with Claim 1 wherein the stationary member is a casing of a rotary machine, wherein measuring a gauge clearance distance using a second probe comprises measuring a thickness of the casing using the second probe.

17. A method in accordance with Claim 16 wherein the second probe includes a body and a gauge rod that is extendable from the body wherein measuring a thickness of the casing using the second probe comprises:

determining a casing radially inner surface position relative to a predetermined probe reading;

determining a casing radially outer surface position relative to the predetermined probe reading; and

determining the casing thickness from the determined casing inner and outer positions.

18. A method in accordance with Claim 17 wherein a distal end of the gauge rod includes a surface normal to a longitudinal axis of the gauge rod wherein determining a casing radially inner surface position comprises:

inserting a distal end of the gauge rod through an aperture in the casing; and

mating the normal surface of the gauge rod to the casing radially inner surface; and

noting a position reading of the second probe.

19. A clearance measurement system for measuring a clearance distance between a first member and a stationary member, said system comprising:

a first probe comprising a measurement face that is sensitive to a proximity of said first member, said probe mountable in a mounting adapter, said mounting adapter coupled to a radially outer surface of the stationary member;

an amplitude modulation clearance measurement circuit electrically coupled to the first probe; and

a second probe mountable in the mounting adapter.

20. A clearance measurement system in accordance with Claim 19 wherein said first member is rotatable about a longitudinal axis.

21. A clearance measurement system in accordance with Claim 19 wherein said first member and said stationary member are substantially axially co-aligned.

22. A clearance measurement system in accordance with Claim 19 wherein said first member is a turbine rotor assembly.

23. A clearance measurement system in accordance with Claim 19 wherein said first probe is a capacitance probe.

24. A clearance measurement system in accordance with Claim 19 wherein said second probe is a depth gauge, said depth gauge includes a gauge body and a gauge rod that is extendable from said gauge body.

25. A clearance measurement system in accordance with Claim 24 wherein said second probe is configured to lockably couple into said mounting adapter such that a gauge body movement in a direction that is parallel to a gauge rod longitudinal axis is substantially prevented.

26. A clearance measurement system in accordance with Claim 19 wherein the stationary member includes a radially outer casing, said system comprises a probe that includes a rod distal end hook that is configured to engage a radially inner surface of the casing.

27. A clearance measurement system in accordance with Claim 26 wherein said rod distal end hook comprises a body comprising:

an aperture therethrough; and

an engagement surface that is configured to engage a radially inner surface of the casing.

28. A clearance measurement system in accordance with Claim 27 wherein said gauge rod distal end comprises a circumferential groove that is configured to engage at least a portion of said rod distal end hook.

29. A clearance measurement system in accordance with Claim 19 wherein said mounting adapter comprises:

an aperture therethrough, said aperture comprises a first inner diameter and a second inner diameter, an interface between said first and second diameters comprising a shoulder;

a rod guide sleeve comprising an aperture therethrough, said aperture configured to receive a gauge rod, said rod guide sleeves sized to be slidably received within said first diameter and sized to engage said shoulder.

30. A rotary machine comprising:

a stationary member;

a rotatable member, rotatable at least partially within said stationary member; and

a mounting adapter mounted in an aperture extending though said stationary member and in communication with said rotatable member, said mounting adapter comprising a locking member configured to alternately engage a first probe and a second probe, said first probe being of a different type than said second probe.

31. A rotary machine in accordance with Claim 30 wherein said first probe comprises a capacitance probe configured to receive an excitation signal and to generate an output signal relative to a proximity of said rotatable member to a measurement face of said probe.

32. A rotary machine in accordance with Claim 31 wherein said probe is configured to receive a frequency modulated excitation signal.

33. A rotary machine in accordance with Claim 31 wherein said second probe is a depth gauge micrometer.